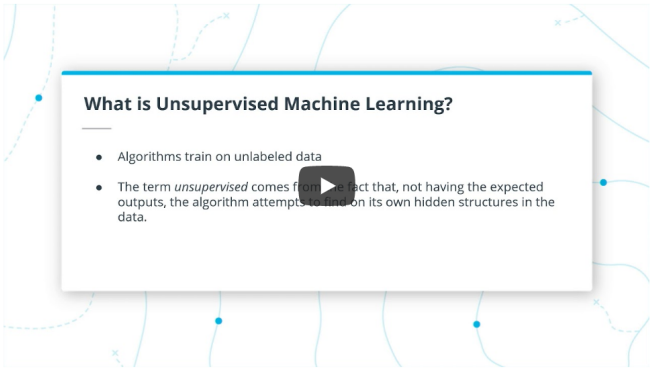
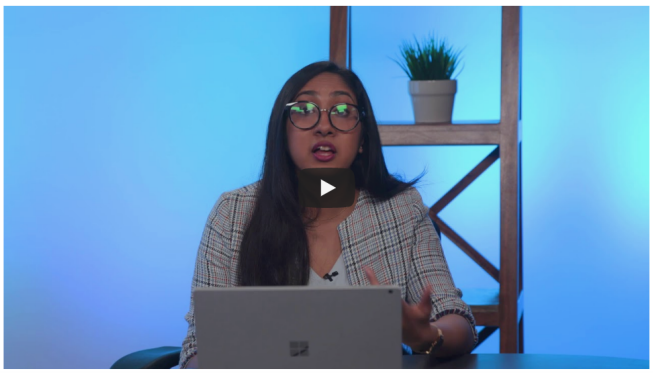
Unsupervised Learning



All of the algorithms we have looked at so far are examples of *supervised learning*, in which the training data is *labeled*. For example, if we are training a classifier to recognize an image of a cat, we might have some images in our training dataset that we already know have cats—and are labeled as such.

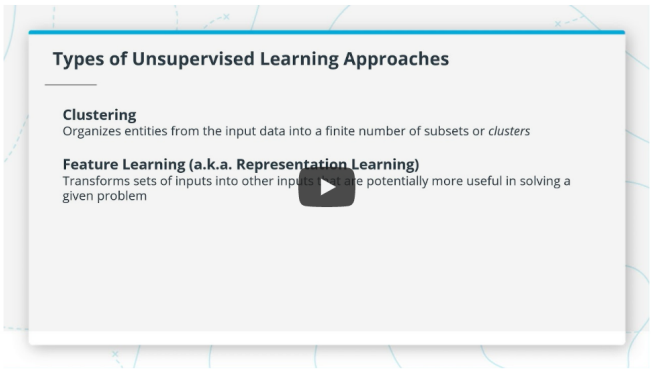
But the cost of obtaining labeled data can be high. So now let's turn our attention to the second main type of machine learning explored in this lesson: **unsupervised learning**.

> *In **unsupervised learning**, algorithms learn from unlabeled data by looking for hidden structures in the data.*



Obtaining unlabeled data is comparatively inexpensive and unsupervised learning can be used to uncover very useful information in such data. For example, we can use **clustering** algorithms to discover implicit grouping within the data, or use **association** algorithms to discover hidden rules that are governing the data (e.g., people who buy product A also tend to buy product B).

Types of Unsupervised Machine Learning



QUIZ QUESTION

Which of the following are examples of unsupervised learning algorithms?

(Select all that apply.)

- [x] K-Means Clustering
- [x] Principal Component Analysis (PCA)
- [ ] Support Vector Machine (SVM)
- [ ] Linear Regression
- [x] Autoencoders

SUBMIT

NEXT